



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/870,095	05/30/2001	Ken'ichi Kasazumi	10873.726US01	8515

7590 03/09/2004
Merchant & Gould P.C.
P.O. Box 2903
Minneapolis, MN 55402-0903

EXAMINER

ORTIZ CRIADO, JORGE L

ART UNIT	PAPER NUMBER
----------	--------------

2655

DATE MAILED: 03/09/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

PM

Office Action Summary

Application No.

09/870,095

Applicant(s)

KASAZUMI ET AL.

Examiner

Jorge L Ortiz-Criado

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 10-11 is/are rejected.
- 7) ☒ Claim(s) 7-9 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 May 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings.

1. Figures 13-13C should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Ito et al. U.S. Patent No. 5,581,531.

Regarding claim 1, Ito et al. discloses an optical pickup comprising:
a coherent light source (See col. 5, lines 62-66; Figs. 6, 11, ref# 11)

Art Unit: 2655

a focusing optical system that converges and directs light from the coherent light source onto an information carrier (See col. 6, lines 4-6; Figs. 6,11); and
a spot size adjuster that reduces a size of a light spot formed on the information carrier in a recording operation (See col. 4, lines 39-62; Figs. 1,3A,6,7A-7D);
relative to a size of a light spot in a reproducing operation (See col. 4, lines 25-47),
mainly in a direction perpendicular to an information track (See col. 6, lines 40-50)

Regarding claim 2, Ito et al. discloses wherein the spot size adjuster includes a variable phase filter that is disposed between the coherent light source and the focusing optical system and that is capable of varying a quantity of a phase shift (See col. 4, line 56 to col. 5, line 1; col. 6, line 55 to col. 7, line 14),
wherein the variable phase filter is divided into at least three regions to produce a phase difference in the direction perpendicular to an information track of the information carrier (See col. 6, line 29 to col. 7, line 14; Figs. 1,7B,7C,7D).

Regarding claim 3, Ito et al. discloses wherein the variable phase filter is divided into three regions, and a width of a center region among the three is in a range of 10% to 20% of a width of a light beam passing through the variable phase filter (See col. 7, lines 1-14; Fig. 8)

Claim Rejections - 35 USC § 103

Art Unit: 2655

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 4-6,10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Ito et al. U.S. Patent No. 5,581,531 in view of Sumi et al. U.S. Patent No. 5,796,683.

Regarding claim 4, Ito et al. further teaches wherein the variable phase filter is divided into at least three regions to produce a phase difference in the direction perpendicular to an information track of the information carrier in a recording operation (See col. 4, lines 39 to col. 5, line 1; col. 6, line 29 to col. 7, line 14; Figs. 1,7B, 7C, 7D), but fails to disclose wherein the variable phase filter includes a homogeneous-alignment liquid crystal element that is aligned in a direction parallel with a polarization direction of light from the coherent light source.

However this feature is well known in the art as evidenced by Sumi et al., which discloses a homogeneous-alignment liquid crystal element that is aligned in a direction parallel with a polarization direction of light from the coherent light source and divided into at least three regions (See col. 9, lines 1-14; Figs. 6,11A,13A,13B,18)

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to include a homogeneous-alignment liquid crystal element that is aligned in a direction parallel with a polarization direction of light from the coherent light source in order to selectively decide, by change of voltages in the divided regions of the homogeneous-alignment

Art Unit: 2655

liquid crystal element, whether or not produce a phase difference in the direction perpendicular to information track of the information carrier and dynamically obtain the desired size of the spot as suggested by Sumi et al.

Regarding claim 5, Ito et al. further teaches wherein the spot size adjustor is divided into at least three regions to produce a phase difference in the direction perpendicular to an information track of the information carrier in a recording operation and varying a quantity of birefringence (See col. 4, lines 39 to col. 5, line 1), but fails to disclose wherein the spot size adjustor includes: a variable wavelength plate that is disposed between the coherent light source and the focusing optical system and that is capable of varying a quantity of birefringence; and an analyzer disposed between the variable wavelength plate and the focusing optical system, wherein the variable wavelength plate is divided into at least three regions to produce a phase difference in the direction perpendicular to the information track of the information carrier.

However this feature is well known in the art as evidenced by Sumi et al., which discloses a variable wavelength plate that is disposed between the coherent light source and the focusing optical system and that is capable of varying a quantity of birefringence; and an analyzer disposed between the variable wavelength plate and the focusing optical system, wherein the variable wavelength plate is divided into at least three regions to produce a phase difference in the direction perpendicular to the information track of the information carrier (See Figs. 6,7A,7B,11A,11,B13A,13B,18)

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to include a variable wavelength plate and an analyzer disposed between the variable wavelength plate and the focusing optical system in order to selectively decide, by change of voltages in the divided regions of the variable wavelength plate, whether or not produce a phase difference in the direction perpendicular to information track of the information carrier and dynamically obtain the desired size of the spot as suggested by Sumi et al.

Regarding claim 6, the combination of Ito et al. and Sumi et al. would show wherein the variable wavelength plate includes a homogeneous-alignment liquid crystal element that is aligned in a direction parallel with a polarization direction of light from the coherent light source (See Sumi et al. col. 9, lines 1-14; Figs. 6,11A,13A,13B,18)

Regarding claim 10, Ito et al. discloses all the limitations based on claim 2 as outlined above. Ito et al. discloses wherein the variable phase filter generates a phase difference between the regions, when information is recorded in the information carrier (See col. 4, lines 39 to col. 5, line 1; col. 6, line 55 to col. 7, line 14; Figs. 1,3A,6, 7A-7D);

Ito et al. further teaches that the phase difference is made by the variable phase filter when information is recorded wherein the variable phase filter is divided into at least three regions to produce a phase difference (See col. 4, lines 39-62; Figs. 1,3A,6,7A-7D); relative to a size of a light spot in a reproducing operation (See col. 4, lines 25-47), but does not expressly disclose the variable phase filter does not generate a phase difference between the regions of the variable phase filter, when information is reproduced from the information carrier.

However this feature is well known in the art as evidenced by Sumi et al., which discloses a variable phase filter made of a liquid crystal element divided in at least three regions capable of generate phase between regions in different operations selectively (See col. 9, line 1 to col. 10, line 41; Figs. 6,7,11,13,18)

Therefore it would have been obvious to one with ordinary skill in the art at the time of the invention to include a variable phase filter capable of selectively decide in which operation recording or reading, generate a phase difference between the regions in order to obtain the desired size of a light spot in the selected operation caused by the phase difference as suggested by Sumi et al.

Regarding claim 11, the combination of Ito et al. with Sumi et al. would show wherein: the variable wavelength plate generates a phase difference between the regions, when information is recorded in the information carrier; and the variable wavelength plate does not generate a phase difference between the regions, when information is reproduced from the information carrier (See Sumi et al. col. 9, line 1 to col. 10, line 41; Figs. 6,7,11,13,18)

Allowable Subject Matter

4. Claims 7,8,9 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2655

Response to Arguments

5. Applicant's arguments with respect to claims 1-12an have been considered but are moot in view of the new ground(s) of rejection.

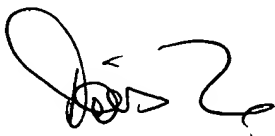
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jorge L Ortiz-Criado whose telephone number is (703) 305-8323. The examiner can normally be reached on Mon.-Thu.(8:30 am - 6:00 pm),Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris H To can be reached on (703) 305-4827. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

joc


DORIS H. TO 31564
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800